AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-73 are cancelled.

74. (previously presented) A method of delivering a nucleic acid into an organism comprising steps of:

porating a biological membrane at a selected area of the organism to form at least one micropore 1-1000 μm in diameter in said biological membrane comprising the step of ablating the biological membrane by placing a heat conducting element in substantial physical contact with the selected area to deliver sufficient energy by conduction to said selected area of said biological membrane such that the temperature of tissue-bound water and other vaporizable substances in said selected area is elevated above the vaporization point of said water and other vaporizable substances, thereby removing the biological membrane in said selected area; and

contacting the selected area with a nucleic acid under conditions whereby the nucleic acid is taken up into the organism through the at least one micropore formed in the biological membrane.

75. (previously presented) The method of claim 74, wherein the nucleic acid is DNA.

76. (previously presented) The method of claim 74, wherein the nucleic acid is RNA.

77. (previously presented) A method for delivering a permeant into an organism comprising steps of:

porating a biological membrane at a selected area of the organism to form at least one micropore 1-1000 μm in diameter in said biological membrane, comprising the step of ablating the biological membrane by placing a heat conducting element in substantial physical contact with the selected area to deliver sufficient energy by conduction to said selected area of said

biological membrane such that the temperature of tissue-bound water and other vaporizable substances in said selected area is elevated above the vaporization point of said water and other vaporizable substances, thereby removing the biological membrane in said selected area; and

contacting the selected area with a permeant, wherein the permeant is selected from the group consisting of insulin, interferon and heparin, under conditions whereby the permeant is taken up into the organism through the at least one micropore formed in the biological membrane.

78. (previously presented) A method of delivering a permeant associated with a carrier into an organism comprising steps of:

porating a biological membrane at a selected area of the organism to form at least one micropore 1-1000 μm in diameter in said biological membrane comprising the step of ablating the biological membrane by placing a heat conducting element in substantial physical contact with the selected area to deliver sufficient energy by conduction to said selected area of said biological membrane such that the temperature of tissue-bound water and other vaporizable substances in said selected area is elevated above the vaporization point of said water and other vaporizable substances thereby removing the biological membrane in said selected area; and

contacting the selected area with the carrier under conditions whereby the permeant associated with the carrier is taken up into the organism through the at least one micropore formed in the biological membrane; wherein the carrier comprises liposomes, lipid complexes, microparticles, or polyethylene glycol compounds; and optionally,

wherein the carrier is formulated to have a charge.

79. (previously presented) The method of claim 78, wherein the carrier comprises liposomes.

80. (previously presented) The method of claim 78, wherein the carrier comprises lipid complexes.

Claim 81 is cancelled.

82. (previously presented) The method of claim 78, wherein the carrier comprises microparticles.

83. (previously presented) The method of claim 78, wherein the carrier comprises polyethylene glycol compounds.

84. (previously presented) An apparatus for delivering a formulation into an organism comprising:

a supply of a dry powder formulation; and

a heat source, which, when put in substantial physical contact with a selected area of a biological membrane of the organism, is capable of porating the biological membrane at the selected area to form at least one micropore 1-1000 μm in diameter, by delivering sufficient energy to the selected area such that the temperature of tissue-bound water and other vaporizable substances in the selected area is elevated above the vaporization point of the water and other vaporizable substances, thereby removing the biological membrane in the selected area, and wherein the apparatus enables the dry powder formulation, when the dry powder formulation is put in contact with the selected area, to be taken up through the micropore into the organism, wherein the apparatus delivers the dry powder formulation into the organism.

85. (previously presented) The apparatus of claim 84, wherein the dry powder formulation comprises a peptide(s), protein(s), vaccine antigen, DNA or RNA.

86. (previously presented) The apparatus of claim 84, wherein the dry powder formulation comprises adenovirus.

87. (previously presented) The apparatus of claim 84, wherein the dry powder formulation comprises microparticles.

88. (previously presented) The apparatus of claim 87, wherein said microparticles comprise a bioactive agent(s).

89. (previously presented) The apparatus of claim 88, wherein said bioactive agent(s) is selected from the group consisting of peptide(s), protein(s), vaccine antigen(s), DNA or RNA.

90. (previously presented) The apparatus of claim 89, wherein said DNA or RNA is naked, fragmented, encapsulated or coupled to another agent.

91. (Currently Amended) An apparatus for delivering a bioactive agent into an organism comprising:

a heat source, which, when put in substantial physical contact with a selected area of a biological membrane of the organism, is capable of porating the biological membrane at the selected area to form at least one micropore 1-1000 μm in diameter, by delivering sufficient energy to the selected area such that the temperature of tissue-bound water and other vaporizable substances in the selected area is elevated above the vaporization point of the water and other vaporizable substances, thereby removing the biological membrane in the selected area, and wherein the apparatus enables the bioactive agent, when the bioactive agent is put in contact with the selected area, to be taken up through the micropore into the organism, wherein said bioactive agent is put in contact with the selected area in a form selected from the group consisting of a tablet[[,]] and a bio-erodable matrix ~~and an adhesive polymer~~, wherein said bio-erodable matrix ~~and adhesive polymer matrix are~~ is fabricated in a manner to allow the bioactive agent to be released into the organism via the micropore, wherein the apparatus delivers the bioactive agent into the organism.

92. (previously presented) A system for stimulating an immune response in an organism, comprising:

a supply of a permeant; and

a heat source, which, when put in substantial physical contact with a selected area of a biological membrane of the organism, is capable of porating the biological membrane at the selected area to form at least one micropore 1-1000 μm in diameter and at a depth coincident with increased concentration of langerhans cells, by delivering sufficient energy to the selected area such that the temperature of tissue-bound water and other vaporizable substances in the selected area is elevated above the vaporization point of the water and other vaporizable substances, thereby removing the biological membrane in the selected area, and wherein the system enables the permeant, when the permeant is put in contact with the selected area, to be taken up through the micropore into the organism, wherein the system stimulates the immune response in the organism.

93. (previously presented) The system of claim 92, wherein the depth of the micropore is 180 microns to 250 microns.

94. (currently amended) The system of claim 92, wherein the organism is ~~a human or~~ an animal.

95. (currently amended) The system of claim 94 ~~92~~, wherein the ~~organism~~ animal is a human.

96. (previously presented) The system of claim 92, wherein the permeant is a vaccine.

97. (previously presented) The system of claim 96, wherein the vaccine comprises DNA or RNA.

98. (currently amended) ~~A process for using the system of claim 92 to introduce a permeant into an organism in order to stimulate an immune response in the organism, comprising delivering~~ The system of claim 92, wherein the permeant is introduced into the epidermis via formed micropores at a depth coincident with increased concentration of langerhans cells. ~~via formed micropores.~~

99. (currently amended) The ~~process~~ system of claim 98, wherein the surface area of the selected area of the biological membrane is greater than the total area~~s~~ of the micropores.

100. (previously presented) A system for delivering a formulation into an organism comprising:

a supply of a dry powder formulation; and

a heat source, which, when put in substantial physical contact with a selected area of a biological membrane of the organism, is capable of porating the biological membrane at the selected area to form at least one micropore 1-1000 μm in diameter, by delivering sufficient energy to the selected area such that the temperature of tissue-bound water and other vaporizable substances in the selected area is elevated above the vaporization point of the water and other vaporizable substances, thereby removing the biological membrane in the selected area, and wherein the system enables the dry powder formulation, when the dry powder formulation is put in contact with the selected area, to be taken up through the micropore into the organism, wherein the system delivers the dry powder formulation into the organism.

101. (previously presented) The system of claim 100, wherein the dry powder formulation comprises a peptide(s), protein(s), vaccine antigen(s), DNA or RNA.

102. (previously presented) The system of claim 100, wherein the dry powder formulation comprises microparticles.

103. (previously presented) The system of claim 102, wherein said microparticles comprise a bioactive agent(s).

104. (previously presented) The system of claim 103, wherein said bioactive agent(s) is selected from the group consisting of peptide(s), protein(s), vaccine antigen(s), DNA or RNA.

105. (previously presented) The system of claim 104, wherein said DNA or RNA is naked, fragmented, encapsulated or coupled to another agent.

106. (cancelled)